

Application No. 10/004,259
Paper Dated July 6, 2006
Reply to USPTO Corres. of June 5, 2006
Attorney Docket No. 116-011833
Response Under 37 CFR § 1.116
Expedited Examining Procedure
Examining Group 1700

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): An analysis system comprising:

a sample rack in which plural samples dissolved in protonated solvent are accommodated;

a turntable for carrying sample containers and incrementally rotating to present the sample containers at various stations;

a sample container supply means for supplying sample containers;

a sample aspirating-and-dispensing means for aspirating each sample from said sample rack and dispensing said sample into said sample container;

a solvent-removing means for evaporating off ~~a first~~ the protonated solvent from each sample and drying and solidifying the sample comprising nozzles for removal of the solvent by injecting gas into the sample container, the depth of the insertion of the nozzles into the sample container being increased as the progress of removal;

a source of deuterated solvent;

a solvent-dispensing means for dispensing a ~~second~~ deuterated solvent from said source into each ~~sample~~ dried and solidified sample;

a sample-stirring means for stirring the sample in which said ~~second~~ deuterated solvent has been dispensed;

a sample aspirating-and-transferring means for aspirating each sample dissolved in said ~~second~~ deuterated solvent and transferring sample into a measuring portion;

a sample recovery means for recovering the sample into a sample container from said measuring portion after measurement;

a sample container recovery means for recovering the sample container in which the investigated sample has been recovered; and

a control means for controlling the aforementioned various means.

Claim 2 (Original): The analysis system of claim 1, wherein said plural samples are successively supplied from a high performance liquid chromatograph.

Claim 3 (Original): The analysis system of claim 2, wherein the samples supplied from said high performance liquid chromatograph are separately taken into a fraction collector of said high performance liquid chromatograph and then supplied successively to a sample rack via tubes in communication with said sample rack.

Claim 4 (Original): The analysis system of claim 1, wherein said solvent-removing means comprises a sample container temperature-adjusting means for adjusting the temperature of the sample container to a desired temperature and a gas blowout means for blowing a regulated flow rate of gas against the sample, the gas being adjusted to a desired temperature.

Claim 5 (Currently Amended): The analysis system of claim 1, wherein said ~~second~~ deuterated solvent contains plural kinds, and wherein said solvent-dispensing means is capable of selecting a desired one out of the plural kinds of said ~~second~~ deuterated solvent and dispensing the selected kind of ~~the second~~ said second solvent.

Claim 6 (Original): The analysis system of claim 1, wherein each sample aspirated and transferred by said sample aspirating-and-transferring means is subjected to measurement and then the sample is pushed out of the measuring portion by a gas under pressure, whereby the sample is recovered into a sample container.

Claim 7 (Original): The analysis system of claim 1, wherein the rack for holding the sample container recovered by said sample container recovery means is of microplate size.

Claim 8 (Original): The analysis system of claim 1, wherein said samples are solutions including said first solvent.

Claim 9 (Withdrawn): An analysis method comprising the steps of:
placing plural samples in a sample rack;
supplying sample containers;
aspirating each sample from said sample rack and dispensing the sample into said sample container;
evaporating off a first solvent from each sample and drying and solidifying the sample;
dispensing a second solvent into each sample dried and solidified;
stirring each sample in which said second solvent has been dispensed;
aspirating the sample in which said second solvent has been dispensed and transferring the sample into a measuring portion;
recovering the investigated sample into said sample container after measurement; and
recovering said sample containers in which the samples have been recovered.

Claim 10 (Withdrawn): The analysis method of claim 9, further comprising the step of skipping desired ones of said steps.

Claim 11 (Withdrawn): The analysis method of claim 9, wherein said samples are solutions including said first solvent.

Claim 12 (Currently Amended): An analysis system comprising:
a sample container supply means for supplying sample containers each holding a sample dissolved in protonated solvent therein;
a turntable for carrying sample containers and incrementally rotating to present the sample containers at various stations;
a solvent-removing means for evaporating off ~~a first~~ the protonated solvent in the supplied sample containers and drying and solidifying each sample comprising nozzles for removal of the solvent by injecting gas into the sample container, the depth of the insertion of the nozzles into the sample container being increased as the progress of removal;
a source of deuterated solvent;

a solvent-dispensing means for dispensing a ~~second~~ deuterated solvent from said source into each ~~sample~~ dried and solidified sample;

a sample-stirring means for stirring each sample in which said ~~second~~ deuterated solvent has been dispensed;

a sample aspirating-and-transferring means for aspirating each sample dissolved in said ~~second~~ deuterated solvent and transferring the aspirated sample into a measuring portion;

a sample recovery means for recovering the sample into a sample container from said measuring portion after measurement;

a sample container recovery means for recovering the sample containers in which the investigated samples have been recovered; and

a control means for controlling the above-described various means.

Claim 13 (Original): The analysis system of claim 12, wherein said solvent-removing means comprises a sample container temperature-adjusting means for adjusting the temperature of the sample container to a desired temperature and a gas blowout means for blowing a regulated flow rate of gas against the sample, the gas being adjusted to a desired temperature.

Claim 14 (Currently Amended): The analysis system of claim 12, wherein said ~~second~~ deuterated solvent contains plural kinds, and wherein said solvent-dispensing means is capable of selecting a desired one out of the plural kinds of ~~the-second~~ said deuterated solvent and dispensing it.

Claim 15 (Original): The analysis system of claim 12, wherein the sample aspirated and transferred by said aspirating-and-transferring means is subjected to measurement and then the sample is pushed out of the measuring portion by a gas under pressure, whereby the sample is recovered into the sample container.

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Claim 16 (Original): The analysis system of claim 12, wherein a rack for accommodating the sample containers recovered by said sample container recovery means is of microplate size.

Claim 17 (Original): The analysis system of claim 12, wherein said samples are solutions including said first solvent.

Claim 18 (Withdrawn): An analysis method comprising the steps of:
supplying sample containers each holding a sample therein;
evaporating off a first solvent from the sample in each supplied sample container and drying and solidifying the sample;
dispensing a second solvent into each sample dried and solidified;
stirring each sample in which said second solvent has been dispensed;
aspirating each sample dissolved in said second solvent and transferring the sample into a measuring portion;
recovering each sample into a sample container from said measuring portion after measurement; and
recovering the sample containers in which the investigated samples have been recovered.

Claim 19 (Withdrawn): The analysis method of claim 18, further comprising the step of skipping desired ones of said steps.

Claim 20 (Withdrawn): The analysis method of claim 18, wherein said samples are solutions containing said first solvent.

Claim 21 (Currently Amended): An analysis system comprising:
a sample container supply means for supplying sample containers each holding a sample dissolved in protonated solvent therein;
a turntable for carrying sample containers and incrementally rotating to present the sample containers at various stations;

a solvent-removing means for evaporating off a first solvent from each sample and drying and solidifying the sample comprising nozzles for removal of the solvent by injecting gas into the sample container, the depth of the insertion of the nozzles into the sample container being increased as the progress of removal;

a source of deuterated solvent;

a solvent-dispensing means for dispensing a ~~second~~ deuterated solvent from said source into each sample container;

a sample-stirring means for stirring each sample in which said ~~second~~ deuterated solvent has been dispensed;

a sample aspirating-and-transferring means for aspirating each sample dissolved in said ~~second~~ deuterated solvent and transferring the sample into a measuring portion;

a sample recovery means for recovering the sample into a sample container from said measuring portion after measurement;

a sample container recovery means for recovering each sample container in which the investigated sample has been recovered; and

a control means for controlling the above-described various means.

Claim 22 (Currently Amended): The analysis system of claim 21, wherein said ~~second~~ deuterated solvent contains plural kinds, and wherein said solvent-dispensing means is capable of selecting a desired one out of the plural kinds of ~~the second~~ said deuterated solvent and dispensing it.

Claim 23 (Original): The analysis system of claim 21, wherein the sample aspirated and transferred by said aspirating-and-transferring means is subjected to measurement and then pushed out of said measuring portion by a gas under pressure, whereby the sample is recovered into said sample container.

Claim 24 (Original): The analysis system of claim 21, wherein the rack for holding the sample containers recovered by said sample container recovery means is of microplate size.

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Claim 25 (Currently Amended): The analysis system of claim 21, wherein the samples are solutions dissolved in said ~~second~~ deuterated solvent or are a solid.

Claim 26 (Withdrawn): An analysis method comprising the steps of:
supplying sample containers each holding a sample therein;
dispensing a second solvent into each sample container;
stirring the sample in which said second solvent has been dispensed;
aspirating each sample containing said second solvent and transferring the sample into a measuring portion;
recovering each sample into a sample container from said measuring portion after measurement; and
recovering each sample container in which the investigated sample has been recovered.

Claim 27 (Withdrawn): The analysis method of claim 26, further comprising the step of skipping desired ones of said steps.

Claim 28 (Withdrawn): The analysis method of claim 26, wherein the samples are solutions dissolved in said second solvent or are a solid.

Claim 29 (Withdrawn): The analysis system of claim 1, 12, or 21, wherein said first solvent is a protonated solvent, and wherein said second solvent is a deuterated solvent.

Claim 30 (Withdrawn): The analysis method of claim 9, 18, or 26, wherein said first solvent is a protonated solvent, and wherein said second solvent is a deuterated solvent.

Claim 31 (Withdrawn): The analysis system of claim 1, 12, or 21, wherein the aforementioned various means are set at the site of given positions on a turntable, and

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wherein the process is made to proceed by rotating said turntable carrying the sample containers thereon incrementally.

Claim 32 (Withdrawn): The analysis method of claim 9, 18, or 26, wherein the aforementioned various steps are carried out in given positions on a turntable, and wherein the process is made to proceed by rotating said turntable carrying the sample containers thereon incrementally.